

Nothing's out of reach.



SMART CITIES START WITH SMARTER UTILITIES:

The role of smart water





Smart water application is pertinent to everyone.



Consumers



Businesses



Utilities



Municipalities

Water sustains life. We just can't live without it. Water's value comes from its cleanliness and its delivery. Simply put, if it's not clean, water can be detrimental to health and life. If water is not available, it remains out of reach, whether it is clean or not.

The purpose of today's water industry is to create and sustain the water production process—extraction, cleanliness, delivery for consumption and reclamation. As the global population continues to grow, it's imperative that the industry better manages water processing to ensure that existing water resources effectively and efficiently reach all of us.

Expand the smart water cycle

There is a global call among utilities to embrace a "smart" approach. Water providers are challenged to use the rapidly evolving technology to improve processes and sustain associated resources.

"Most utilities and municipalities define smart water in terms of manageable elements within the flow from storage to consumption," says Travis Smith, director of smart water strategy at Sensus. "But as an industry, we need to expand our perspective to the entire processing cycle, considering more of a smart water cycle."

Water utilities serve four primary purposes: to provide clean drinking water; to manage the flow of water through the system for consumption and firefighting; to sustain water and the water system; and to oversee the account service, including both customer service and financial aspects. Smart water application is pertinent to everyone and benefits consumers, businesses, utilities and municipalities, significantly impacting each of these four areas.

"The bottom line for a true water cycle solution is collecting the right data at the right time, integrating it through the right communication system and applying the right analytics—all focused on specific improvement."

TRAVIS SMITH
 Director of smart water strategy
 Sensus



The four components of a smart water cycle solution



Accurate measurement devices



Communications path



Data storage and structure



Data applications

The right data matters

In the current narrow scope of smart water standards, the prevailing cry is, “It’s all about the data.” Although there is a kernel of truth in this statement, it is not completely accurate. According to Smith, “We have to get the right data at the right time to make the right decisions. Data for data’s sake doesn’t necessarily lead to the best actions.” Smith explains that the water system differs every day, throughout the months and years. “Consumer use and weather patterns vary every hour,” he says, “so we need to view the water cycle and manage water systems based on an hourly utilization. We can’t measure for three weeks in July and use that data to predict use and system function for the next three years.”

To execute valid smart water cycle application, the effort must be founded on accurate and timely data measurement. Better measuring devices yield a solid foundation. Truly accurate data, when collected, communicated and analyzed properly, will ultimately:

- **Decrease costs and increase efficiency**
- **Grow potential revenue**
- **Optimize assets used in the water cycle process** (plants, pipes, etc.)
- **Reduce risks** (water main breaks, contamination, public health hazards, etc.)
- **Enhance customer service and consumer quality of life** (cleanliness, reliability, water pressure)

Data beyond data’s sake

“The bottom line for a true smart water cycle solution,” Smith says, “is collecting the right data at the right time, integrating it through the right communication system and applying the right analytics—all focused on a specific improvement.” So, once accurate measurement devices are in place and data collected, how can that data then be purposefully and effectively used for specific improvement? According to Smith, there are four vital components to a strategic smart water cycle solution:

- Accurate measurement devices for data collection that establish application parameters
- Communications path from the points of data collection to a hub via radio, Ethernet, cellular or fiber optics
- Data storage and structure to precisely relate data per geography and time
- Applications that take data, present it to the user for actionable solutions and then validate that action



“The future of smart water cycle solutions must directly impact every portion of the cycle, from sourcing and delivery to consumption and reclamation.”

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A smart water cycle taps more revenue

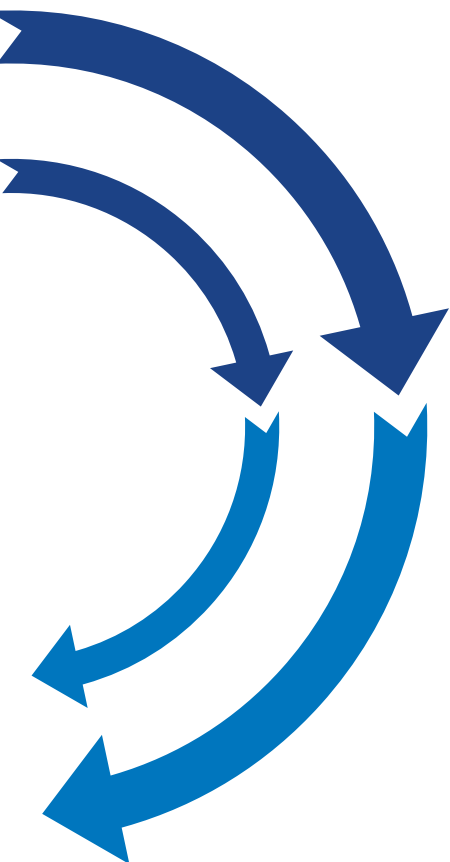
For the average municipality, revenue from water and sewer services is the second largest source of funding behind only taxes. A sizable amount of water does not produce revenue, whether it is unmeasured, unbilled or uncollected. With revenues related to the cleanliness and delivery of water, improvements in the water cycle will have an impact on the bottom line. Between cost savings and increased revenue, municipalities can redirect funds to buy more water assets, improve transportation, create public parks, etc. Moreover, implementing a smart water cycle improves resource sustainability through advanced leak detection, energy management and drought management.

Once implemented, the smart water communications network, which is the underlying foundation of this smart solution, can also be used within other utility areas, elevating other infrastructure resource management. With better water quality, more accurate account management and faster problem resolution, as well as municipal revenue growth, citizens' quality of life is greatly enhanced.

Smith emphasizes a key piece of advice for municipalities and utilities wanting to implement a smart water cycle. “It is essential,” he says, “to choose a communication system that will be a long-term asset, one that can be maintained, upgraded and controlled to be used at their discretion.” Many of the currently available systems, although a significant investment, actually risk quickly becoming obsolete.

Although many municipalities and utilities globally are utilizing advanced metering infrastructures (AMI, or a communication network), such networks primarily are used for billing. Data is captured, but its accuracy is questionable, and the information is not used to its full potential. “AMI can be utilized for better design and modeling of distribution,” Smith says. “The future of smart water cycle solutions must directly impact every portion of the cycle, from sourcing and delivery to consumption and reclamation.”

What's the bottom line for utilities and municipalities? Smart providers and smart municipalities must view the entire water processing cycle in order to improve water delivery and ensure cleanliness. This overall, big-picture approach will ultimately boost the value of water for everyone.



About Sensus

Sensus, a Xylem brand, helps a wide range of public service providers—from utilities to cities to industrial complexes and campuses—do more with their infrastructure to improve quality of life in their communities. We enable our customers to reach farther through the application of technology and data-driven insights that deliver efficiency and responsiveness. We partner with them to anticipate and respond to evolving business needs with innovation in sensing and communications technologies, data analytics and services. Learn more at sensus.com and follow us on Facebook, LinkedIn and Twitter through @sensusglobal.

Sensus by the numbers

